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Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

MAY 11 1998

98-EAP-231

Ms. L. J. Cusack
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336

Dear Ms. Cusack:

REVISION 4 OF FORM 3 DANGEROUS WASTE PERMIT APPLICATION FOR THE 105-DR LARGE SODIUM FIRE FACILITY

The U.S. Department of Energy, Richland Operations Office and Bechtel Hanford, Inc. (BHI) are submitting the enclosed Revision 4 of Form 3 Dangerous Waste Permit Application for the 105-DR Large Sodium Fire Facility. BHI is assuming co-operator responsibility for the facility from Fluor Daniel Hanford, Inc., including signature on the Form 3 as co-operator for the unit. This Form 3 was revised to reflect the change in responsibility.

If you have any questions regarding this revision, please contact Ellen M. Mattlin, of my staff, on (509) 376-2385.

Sincerely,

James E. Rasmussen, Director
Environmental Assurance, Permits
and Policy Division

EAP:EMM

Enclosure

cc w/encl:
Administrative Record
Document and Info Services HO-09
T. N. Draper, BHI
R. J. Landon, BHI
P. J. Mackey, BHI
S. E. McKinney, Ecology

cc w/o encl:
M. C. Hughes, BHI
J. J. McGuire, BHI
M. A. Mihalic, BHI
D. A. Faulk, EPA
F. A. Ruck, FDH

Please print or type in the unshaded areas only
(fill-in areas are spaced for elite type, i.e., 12 character/inch).

FORM 3

DANGEROUS WASTE PERMIT APPLICATION

1. EPA/STATE I.D. NUMBER: W A 7 8 9 0 0 0 8 9 6 7

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED *(mo., day, & yr.)*	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA/STATE I.D. Number, or if this is a revised application, enter your facility's EPA/STATE I.D. Number in Section I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

MO. 0 3 | DAY 2 2 | YR. 4 3 — *FOR EXISTING FACILITIES, PROVIDE THE DATE *(mo., day, & yr.)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

* The date construction of the Hanford Facility commenced.

☐ 2. NEW FACILITY *(Complete item below)*

MO. | DAY | YR. — FOR NEW FACILITIES, PROVIDE THE DATE *(mo., day, & yr)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(place an "X" below and complete Section I above)*

☒ 1. FACILITY HAS AN INTERIM STATUS PERMIT

☐ 2. FACILITY HAS A FINAL PERMIT

III. PROCESSES - CODES AND CAPACITIES

A. PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the *(Section III-C)*.

B. PROCESS DESIGN CAPACITY - For each code entered in column A enter the capacity of the process.

1. AMOUNT - Enter the amount.

2. UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER (barrel, drum, etc)	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D80	GALLONS OR LITERS
LANDFILL	D81	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D82	*ACRES OR HECTARES*
OCEAN DISPOSAL	D83	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D84	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Section III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
LITERS	L
CUBIC YARDS	Y
CUBIC METERS	C
GALLONS PER DAY	U
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H
ACRE-FEET	A
HECTARE-METER	F
ACRES	B
HECTARES	Q

EXAMPLE FOR COMPLETING SECTION III *(shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons.* The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PROCESS CODE *(from list above)*	B. PROCESS DESIGN CAPACITY 1. AMOUNT *(specify)*	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE *(enter code)*	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE *(from list above)*	B. PROCESS DESIGN CAPACITY 1. AMOUNT *(specify)*	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE *(enter code)*	FOR OFFICIAL USE ONLY
X-1	S02	600	G		5				
X-2	T03	20	E		6				
1	S01	20,000	L		7				
2	T04	100	V		8				
3					9				
4					10				

Continued from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

Refer to following page

IV. DESCRIPTION OF DANGEROUS WASTES

A. DANGEROUS WASTE NUMBER - Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describes the characteristics and/or the toxic contaminants of those dangerous wastes.

B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE
POUNDS	P
TONS	T

METRIC UNIT OF MEASURE	CODE
KILOGRAMS	K
METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed dangerous waste: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed dangerous wastes: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER - Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

1. Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.

2. In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.

3. Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

EXAMPLE FOR COMPLETING SECTION IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. DANGEROUS WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES 1. PROCESS CODES *(enter)*	D. PROCESSES 2. PROCESS DESCRIPTION *(if a code is not entered in D(1))*
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2			T 0 3 D 8 0	*included with above*

FORM 3 DANGEROUS WASTE PERMIT APPLICATION
U. S. ENVIRONMENTAL PROTECTION AGENCY/STATE IDENTIFICATION NUMBER WA7890008967

Section III.C., Description of Process Codes Listed in Section III.A.

The 105-DR Large Sodium Fire Facility was a research laboratory located in the 105-DR Reactor Building in the 100-D Area of the Hanford Site. The unit was used to conduct experiments for studying the behavior of molten alkali metals and alkali metal fires. This unit had also been used for the storage and treatment of alkali metal dangerous waste. The 105-DR Large Sodium Fire Facility operated between 1972 and 1986.

In 1995, closure activities were initiated at the unit for Areas 1, 3, and 7, as defined in Part V, Chapter 10, of the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit (Permit Number WA7890008967). Area 1 is defined as the Fan Supply Room, Exhaust Fan Room, Small Fire Room, Large Fire Room, and Sodium Handling Room. Area 3 is defined as the New Gravel Scrubber (removed during closure activities). Area 7 is defined as soils to the north and west of the 117-DR Filter Building.

In 1996, Ecology (Letter, M.A. Wilson, Ecology to J.E. Rasmussen, U.S. Department of Energy, and E.F. Loika, Westinghouse Hanford Company, dated July 16, 1996) accepted clean closure of Areas 1, 3, and 7 and released these areas from the requirements of RCRA and Chapter 173-303 of the Washington Administrative Code (WAC). Also, the letter identified that Area 6 (the 117-DR-8 Crib and the connecting piping from the 117-DR Filter Building to the crib), as defined by Part V, Chapter 10 of the Hanford Facility RCRA Permit, is believed not to have received dangerous waste and is considered closed for the purposes of Chapter 173-303 WAC.

Areas 2, 4, and 5, as defined by Part V, Chapter 10 of the Hanford Facility RCRA Permit, remain regulated by RCRA and Chapter 173-303 WAC. Area 2 is defined as the upper and lower exhaust tunnels within the 105-DR Building, the exterior underground tunnel from the 105-DR Building to the 117-DR Filter Building, and the Spray Scrubber. Area 4 consists of the 117-DR Filter Building, and the exterior underground tunnel from the 117-DR Filter Building to the 116-DR Stack. Area 5 is defined as the 116-DR Stack. Areas 2, 4, and 5 are identified in the schematic on page 9 of 10. Closure of these areas is expected to occur during decommissioning and decontamination of the 105-DR Reactor.

S01/T04

Treatment of alkali metal dangerous waste consisted of heating the waste to the point of oxidation. Any off-gas from treatment was processed through an off-gas system that used portions of the 105-DR Reactor exhaust system.

The maximum storage process design capacity was 20,000 liters (5,284 gallons). The maximum treatment process design capacity was 100 liters per day (26 gallons per day).

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

I.D. NUMBER *(entered from page 1)*

W	A	7	8	9	0	0	0	8	9	6	7

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES 1. PROCESS CODES *(enter)*	D. PROCESSES 2. PROCESS DESCRIPTION *(if a code is not entered in D(1))*
1	D001	20,000	K	S01 T04	Storage-tank/Treatment-other
2	D003		↓	↓	(thermal treatment)
3	WSC2		↓	↓	Included with above
4					
5					
6					
7					
8					
9					
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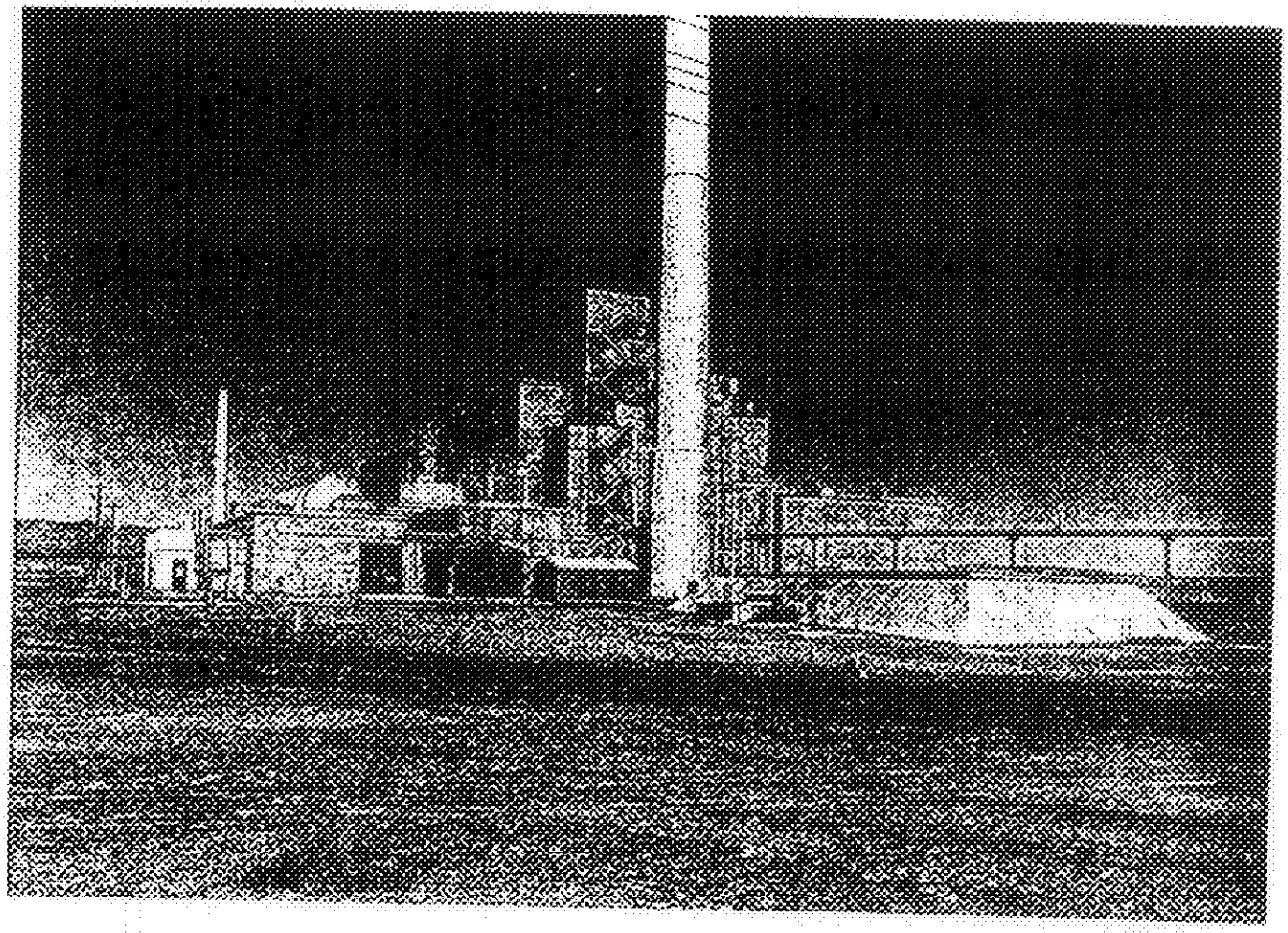
26					

105-DR LARGE SODIUM FIRE FACILITY



46°41'26.046"
119°32'04.141"

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

John D. Wagoner 5/11/98

Owner/Operator
John D. Wagoner, Manager
U.S. Department of Energy
Richland Operations Office

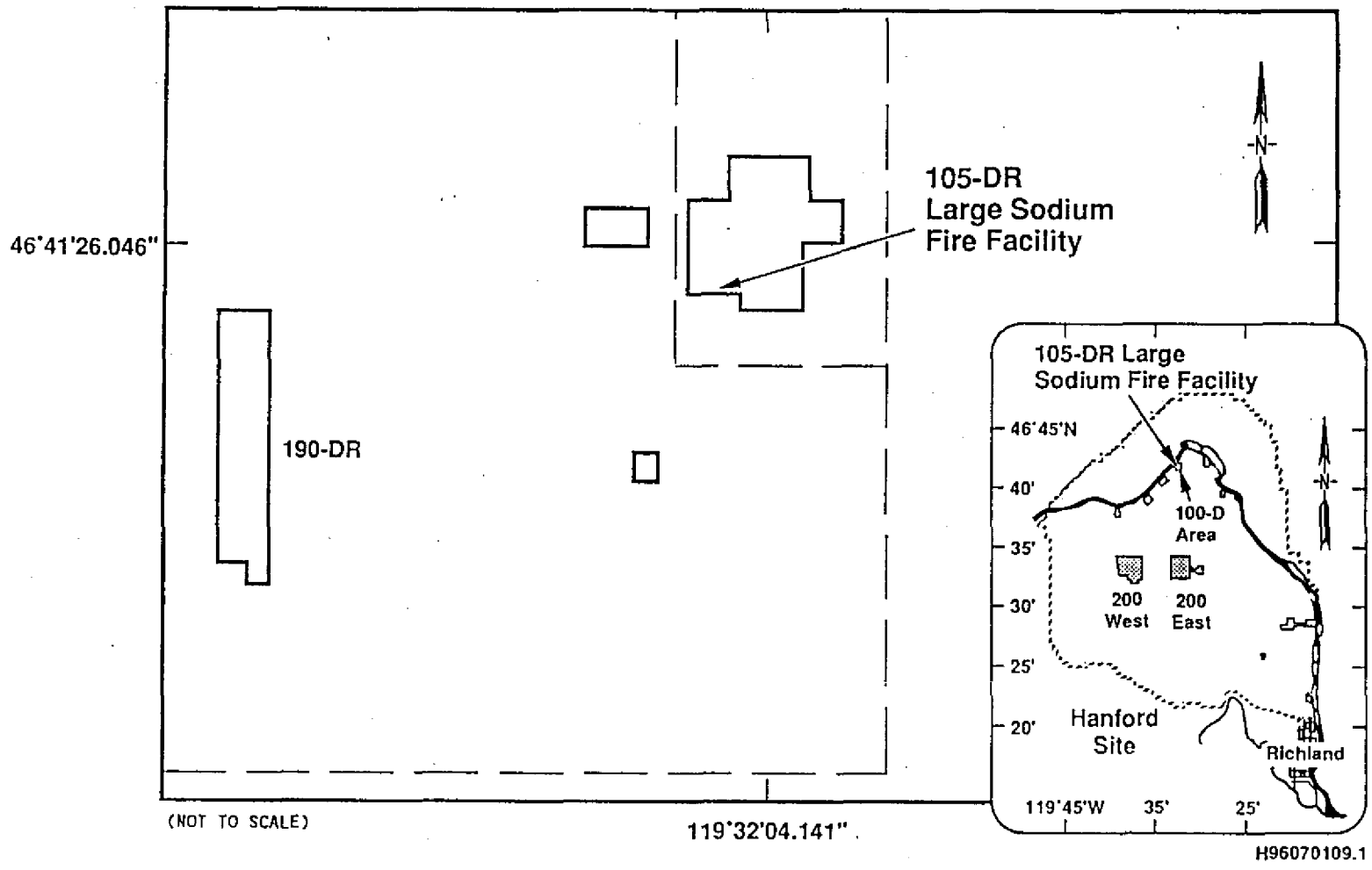
Date

Steven D Liedle 3/10/98

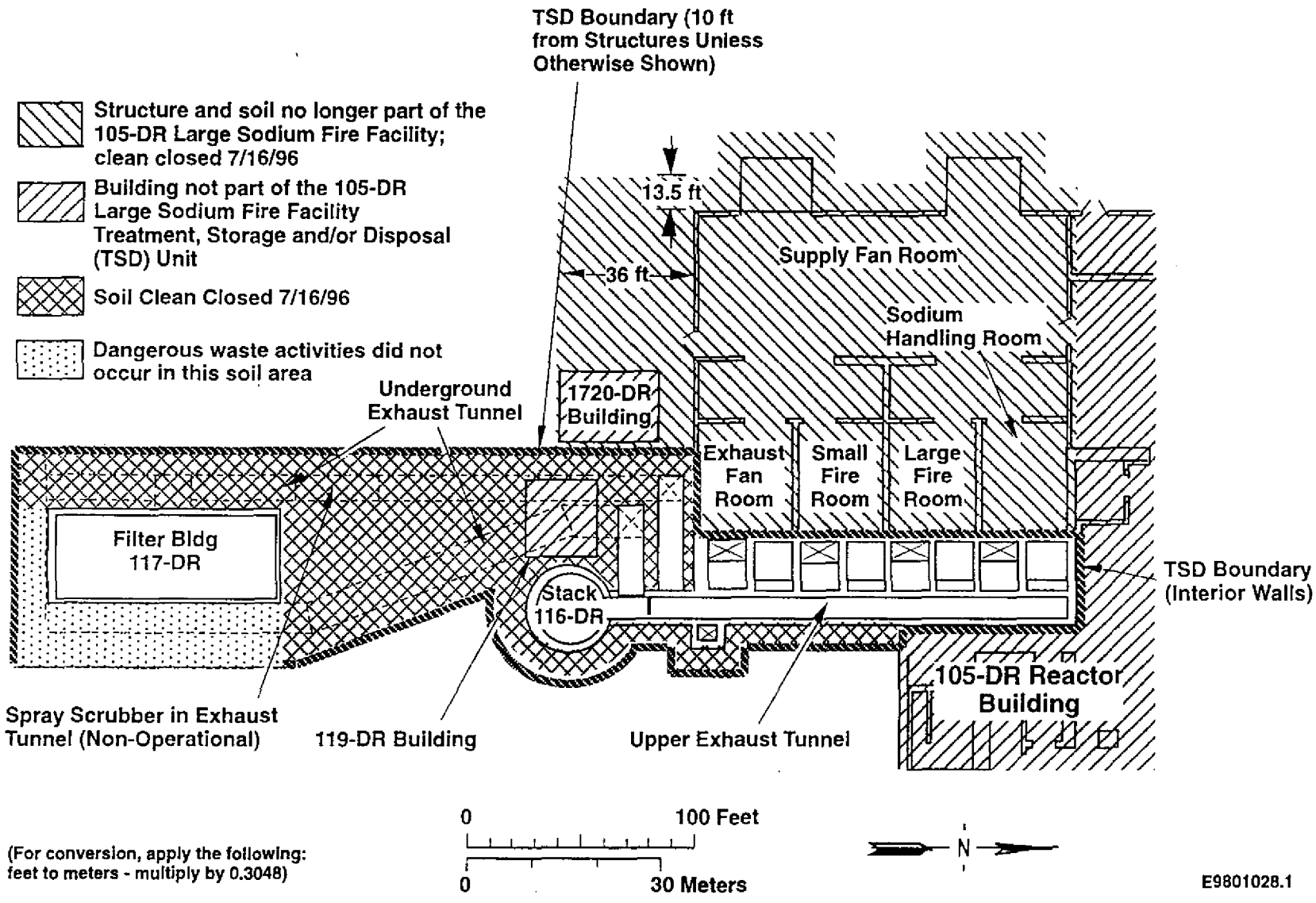
Co-operator
Steven D. Liedle, President
Bechtel Hanford, Inc.

Date

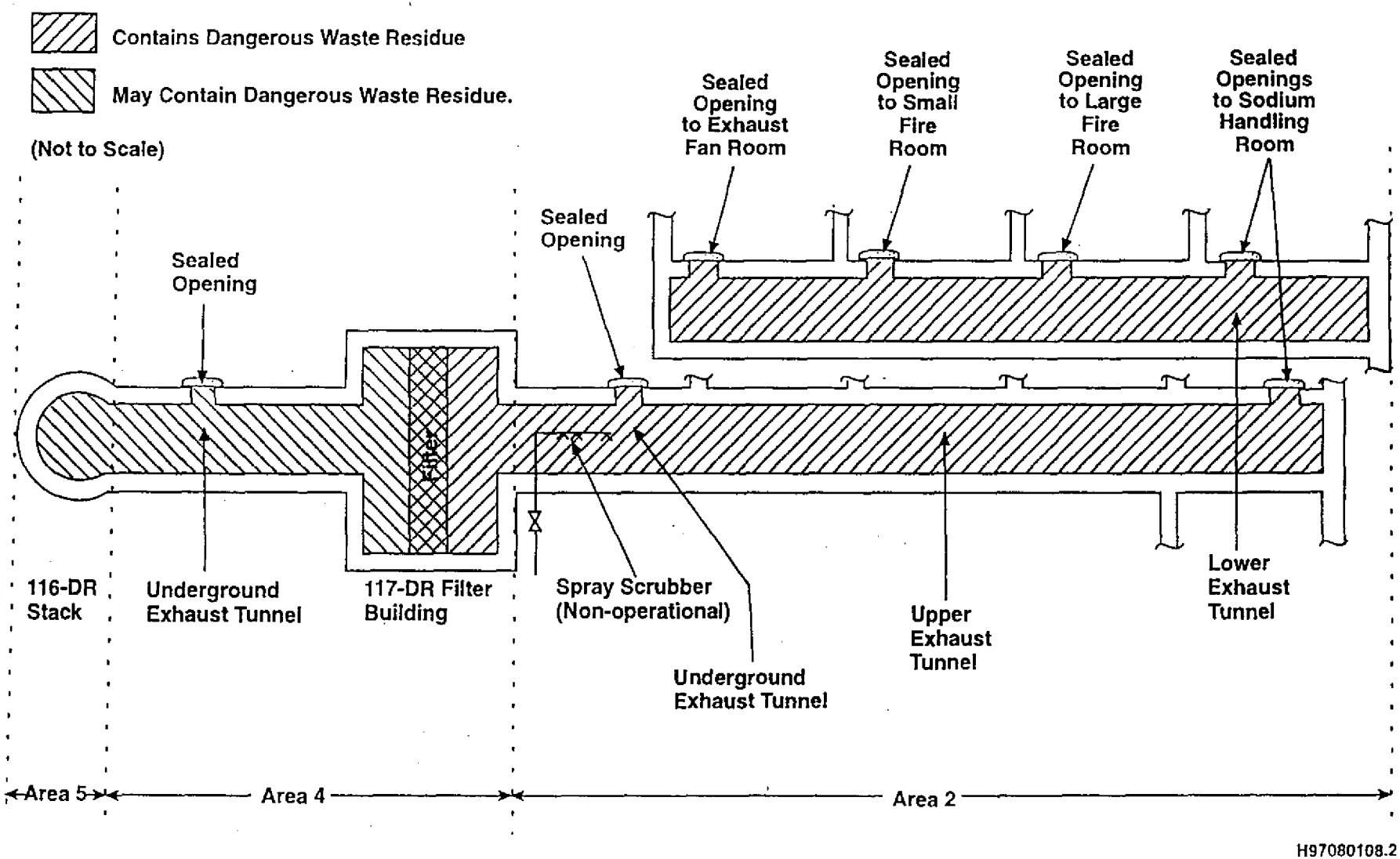
105-DR Large Sodium Fire Facility Site Plan



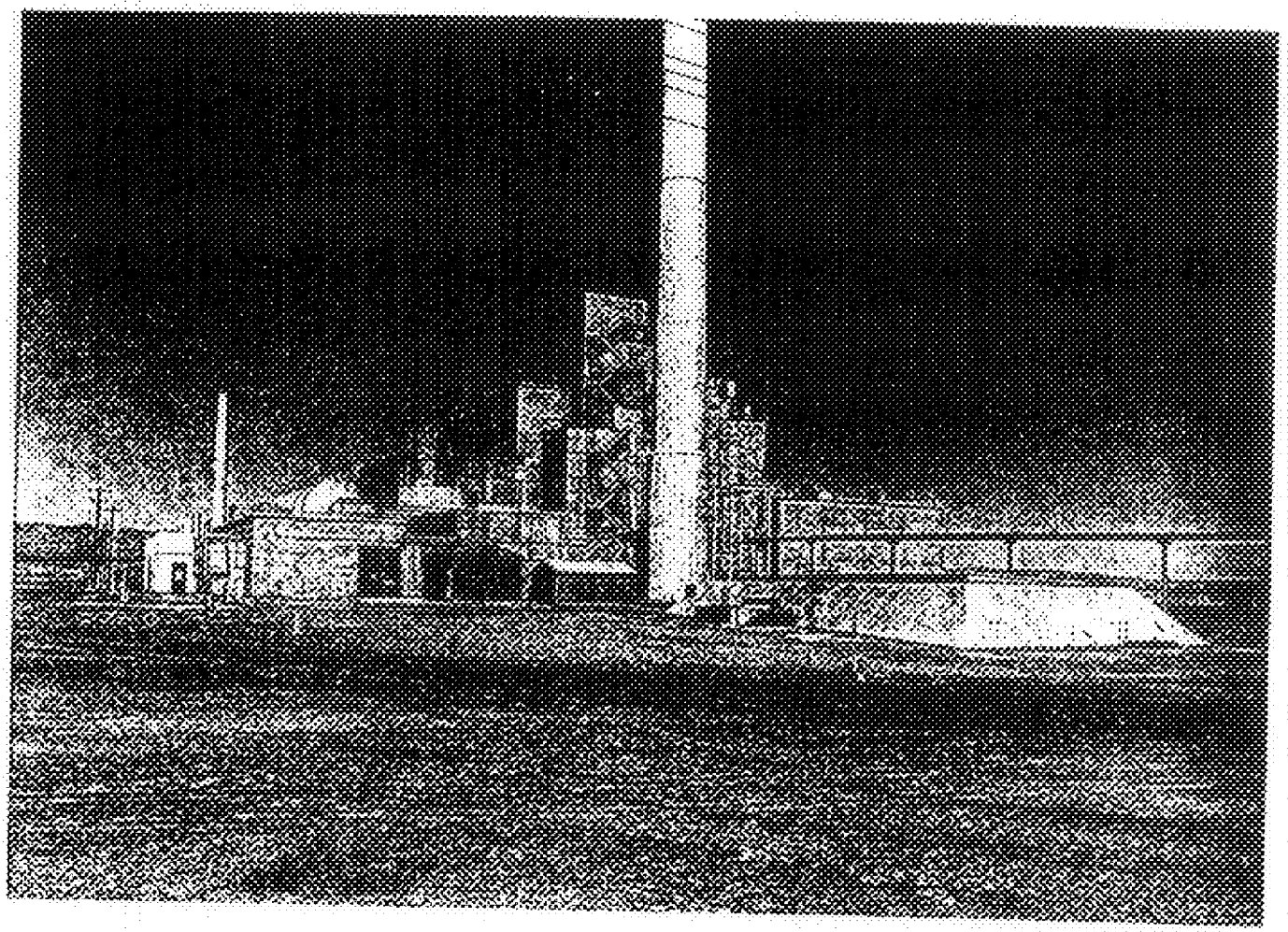
105-DR Large Sodium Fire Facility TSD Boundary



Schematic of the 105-DR Large Sodium Fire Facility



105-DR LARGE SODIUM FIRE FACILITY



46°41'26.046"
119°32'04.141"

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(PHOTO TAKEN 1996)